

Signma plot

\* ~~select the column~~

① statistics

② Regression wizard

③ Sigmoidal ~~3 parameter~~

④ Logistic 4 parameter

if higher parameter does not work,  
use lower one (3)

⑤ parameters: First empty  
need in report ☒  
create new graph ☒



Finish

\* title on column

CV				
▽				

type

\* folder list can name change

Rt click : Edit click

→ type new name

- ① IgG 1mg/ml 50ul 1hr - beads  
 ② Block 200ul 1% BSA  
 ③ Env anti-IgG 50ul  
 Substrate 50ul

IgG (4g dilution)

1:10 1:10 1:100 1:100 1:500 1:500 1:1000 1:1000

	1	2	3	4	5	6	7	8	9	10	11	12
A	Block	IgG	1:10	1:100	1:100							
B		1:10	1:10									
C		1:10	1:10									
D		1:10	1:10									
E		1:10										
F		1:10	✓	✓	✓	✓	✓	✓	✓	✓		
G												
H												

⑤  
 (ml)  
 1 = 1000 ml  
 0.1 = 100  
 0.01 = 10  
 0.005 = 5 ml  
 12 (ml) (4.885)

1:1000

"

1:2000

"

1:4000

"

2ml  
 + 2ml  
 4ml

0.1%  
 BSA-TBS

50ul  
 12x 0.05ml (1ml) PBS  
 0.5  
 1.00  
 1:10 1ml 0.2ml 1.8ml  
 1:100 1ml 0.1ml 0.9ml PBS  
 1:500 1ml 0.2ml 0.8ml  
 1:1000 1ml 0.1ml (100) + 0.9ml

0.9ml

1ml = 1000 ul  
 0.2ml = 200ul

	1	2	3	4	5	6	7	8	9	10	11	12
A	3 <sub>knf</sub>											
B												
C												
D												
E												
F												
G												
H												

- enz substrate - glucose
- ① Antigen - 1hr to even up in bicarbonate buffer of H<sub>2</sub>O (sticky)
  - ② Wash & add blocking reagent  
1% BSA in PBS (phosphate buffered saline)  
↳ 1 hr wait
  - ③ Add Antibody (human serum)  
↳ 1 hr wait
  - ④ Wash
  - ⑤ Add indirect enzyme conjugated Ab  
↳ 1 hr wait
  - ⑥ Wash → ⑦ add substrate

Ag { 1:100 (bicarbonate) 20ul + 2ml  
 1:300 ( " ) 200ul + 0.8ml  
 1:1000 ( " ) 200ul of (1:100) + 1.8ml bicarb  
 1:2000 ( " ) 0.05ml (50ul of 1:100) + 1.0ml bicarb

human IgG in bicarb

	1	2	3	4	5	6	7	8	9	10	11	12
A	Blank											
B	Ag											
C												
D												
E												
F												
G												
H												

1:100

1:2000

1:4000

1:2000

NOT

1:1000

Ag X 1:100 → 1.40.0

0.01 → 1ml  
20ul + 2ml

12 x 0.05 ml = 0.60ml

\* 1:500 1:5 dil = 1:500

0.1ml + 0.4ml  
0.02ml + 0.8

1:1000 diln 0.1ml + 0.9ml (0.2ml + 1.8)

1:2000 diln → 1:20 diln 1 → 20 or 0.172.0

0.1 → 2.0 ml

0.05 → 0.05 ml + 1.0ml

0.05 → 1.0 ml  
(1:20)

12  
0.05  
0.60  
12  
12  
0.60  
12  
0.05  
12  
0.05  
12

①

ELISA : basic concept.

Ag (thyroglobin)

Ante Ab

A simple line drawing of a glass with a straw. The glass is rectangular with a slightly tapered top. A straw is inserted into the glass, with a small loop or bend near the top. There are some small dots inside the glass, possibly representing liquid or bubbles.

Block +  
(1% Bovine  
serum albumin)

pt's serum (Auto Ab to thyroglobulin)

1:50 dilution

{ 1 ml  $\rightarrow$  50 ml

0.1 ml  $\rightarrow$  5 ml

0.01 ml  $\rightarrow$  0.5 ml  
 100 ml  $\rightarrow$  5 ml

(10.44  $\Rightarrow$  500.44)

$I_g$  (Hypoglobulin),  
(Ag)

(goat anti human IgG:

Ap: Alkalium  
phosphat

(human)

(2)

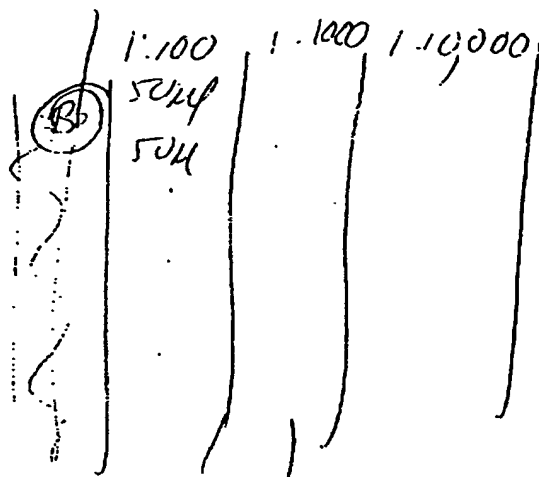
~~IgG~~1000  $\mu$ g/ml in PBS

1: 100

1: 1000

1: 10000

Bicarb 50mM



50ul

Leave on 1 hr at RT

Wash 4x with PBS-Tween 20 200  $\mu$ lBlock with 1% BSA 1 hr (200  $\mu$ l)

Dump

Add anti-AP anti-human IgG (50  $\mu$ l) 1 hrWash 4x with PBS-Tween 20 200  $\mu$ lAdd substrate (50  $\mu$ l) 30 min 37°C

Add stopping reagent (optional)

Read OD


 IgG  
 Alk phosph anti human  
 IgG  
 substrate

Bicarbonate buffer.

1ml : 199  $\mu$ l PBS

① anti - CD Ab ( ) mg/ml  
 → dilute 1:200 in PBS [No BSA, No Serum],  
 place 30  $\mu$ l in each well for stimulation.

② Incubate 1 hr at 37°C or  
 Overnight at 4°C (refrigerator)

③ Wash cells 2 x with 200  $\mu$ l PBS - tap out on  
 paper towel (should be sterile)

④ \* No stim cells at least 1" away from stim

stim	1
○	○
○	○
○	○
○	○

④ 200,000 cells / well in 200  $\mu$ l  
 (=  $1 \times 10^6$  / ml)

⑤ for flow, centrifuge in regular tubes, put  
 supernatant into eppendorf.

⑥ collect S/N at 24 hrs, centrifuge in microfuge  
 and place in a fresh tube

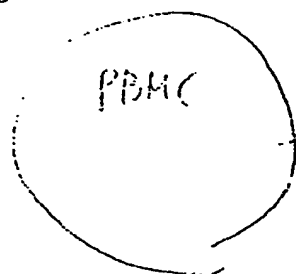
⑦ Assay by ELISA immediately or  
 freeze S/N  $\leq -20^\circ\text{C}$

if multiple ELISA; Aliquot S/N.

— Read ELISA protocol ahead of time  
 How much sample do you need?

IL-10 2:10 → 100  $\mu$ l

~~PHA~~  
 24  
 + dCD3 } compare  
 - dCD3 }



Stim  
Anti CD3

\* R & D Systems

DO NOT use Biosource

IL-2 ↓ (IFN $\gamma$ ) Th1  
 ZL-10 ↑ (L-1000)

10 ml women  
 10 preg women

dCD4b

2 ng/ml

in PBS

(NO BSA  
NO SERUM)

anti CD3  
10  $\mu$ g/ml

① dilute (1:200) place 30  $\mu$ l in each well for stimulation

② incubate (1 hr at 37°C or overnight at 4°C (refrig.))

③ wash wells 2x with 200  $\mu$ l PBS - tap out on paper towel.

④ 200,000 cells/well in 200  $\mu$ l =  $1 \times 10^6$ /ml

⑤a for flow, c. lge in regular tubes, put stim into eppendorf  
 ⑤ collect (S/N) at 24 hrs centrifuge in microfuge and place in a fresh tube.

⑥ assay by ELISA immediately or freeze S/N  $\leq -20^\circ\text{C}$

if multiple ELISAs, aliquot S/N

- read ELISA protocol ahead of time  
 How much SAMPLE DO YOU NEED?

01-10-10



# Coulter Epic (Turn On)

① Computer Power On → (wait 20 min)

② 메인 알카 플랜지 (가운데) 검은 box - orange line 2선  
 • waste box check - 1/2 이상이면 dump  
 • 2 white bottle - dry 해야  
 • 2 transparent bottle - 3/4 이상 채워야  
 • Error 메시지 → 가장

③ Panel → select → start up click & okay click

④ 플랜지 메인 알카 Run 30초 green blink 3/4  
 open the door (플랜지 1 answer)  
 → Isofluid 2432  
 button 2-3번 누르면 bubble 2432 check

⑤ 에러메시지 Error message - click  
 clear error - click

⑥ Carrossal 01 2432 tube

- ① Water 1 ml 2432
- ② F-check : 10 drop
- ③ F-set : 10 drop

⑦ 플랜지 Run 30초 initialization orange line 2선

⑧ Insert tube: 에러 메시지  
 okay click → 5-9초 wait

⑨ Flow-check 2432 : |||| |||| ||| HPCV = CV  
 Flow-set " : |||| |||| ||| MnIX = Mean CH  
 MnX = Peak CH Copy 3/5

⑩ Protocol → select.

(for all  $g \in G$ )

Arg or atmoc.

response - create  
color click

(collected 4-21-73)

Feb 2 -

↓

FOX File

box 21 222,647 160-1 222,402 222,647

74 67 2 2 -

(if more better 5:30 AM day  $\rightarrow$  RT clock 04)

for file.

Diff drive on 2nd floor

C:  $\backslash X \perp \backslash 00. F \backslash 005\% . \text{Docx}$

(Date: \_\_\_\_\_) (Page: \_\_\_\_\_)

1st Grade

Runtime  
factor

→ New protocol / panel

Shutdown.

- ① water
- ② ~~water~~ bleach
- ③ water
- ④ water

} about 1ml

Panel  
→ select  
→ shut down

→ Run (take 8-10 min)  
(Manual dump) put the water or 2X (아래 2개)  
black tube in manual tab  
→ green + blink → push button → it will be blink  
→ 7 com open the door  
(아래 7개 1개만 가요! 1개만 6개 n)

→ take out fast tube  
→ black tube 1개  
→ 2개 black tube 1개

→ test tube 2개  
Auto mode procedure  
put 2 tube water ①. ②  
carousel 01 1개

→ ☐ Auto ☐ Pause  
→ 3개 1개 1개

CD 45 FFE- / CD 14 PE

CD 3 / CD 4

CD 3 / CD 8

CD 5 / CD 19

CD 3 / IL 2

CD 56 / CD 16

Cytokines

IL-1

IL-2

IL-3

↓

IL-20



Target

NK = cytotoxic

50:1

50x more cytotoxic  
target

100,000 targets : 50:1

50x 100,000 lymphocytes  
5x10<sup>6</sup>

25x 100,000

2.5x10<sup>6</sup>

Ex vivo

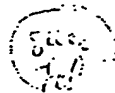
Ex vivo

Regulatory  
inhibitory



1000

600



1500

100

10%

10%

2 hrs



after  
immune  
killing

E.T

2x1

5%



E.T

1x1

5%



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